REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

Title:
Pancreatic injury in COVID-19: pathogenesis and challenges

Authors:
Javier A. Cienfuegos, Ana Almeida Vargas, Daniel Aliseda Jover

DOI: 10.17235/reed.2020.7541/2020
Link: PubMed (Epub ahead of print)

Please cite this article as:
Cienfuegos Javier A., Almeida Vargas Ana, Aliseda Jover Daniel. Pancreatic injury in COVID-19: pathogenesis and challenges. Rev Esp Enferm Dig 2020. doi: 10.17235/reed.2020.7541/2020.

REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

CC 7541

Pancreatic injury in COVID-19: pathogenesis and challenges

Javier A. Cienfuegos[1,2,3], Ana Almeida[1] and Daniel Aliseda[1]

[1]Department of General Surgery. Clínica Universidad de Navarra. School of Medicine. University of Navarra. Pamplona, Spain. [2]Institute of Health Research of Navarra (IdisNA). Pamplona. Spain. [3]CIBER Fisiopatología de la Obesidad y Nutrición (CIBERobn). Instituto de Salud Carlos III. Pamplona, Spain

Correspondence: Javier A. Cienfuegos
e-mail address: fjacien@unav.es

Keywords: Acute pancreatitis. COVID-19.

Dear Editor,

Fernandes et al. reported a case of acute pancreatitis (AP) in a patient with SARS-CoV-2 (1). Although the authors make a detailed analysis of the possible causes of the AP (direct cytopathic effect of SARS-CoV-2 replication, severe systemic inflammatory response), they make no mention of the possible thrombotic etiopathogenesis of the AP.

Since the beginning of the SARS-CoV-2 pandemic, one notable feature of patients admitted with the disease has been the frequency of thrombotic and ischemic phenomena (myocardial infarction, stroke, ischemia of the lower extremities, intestinal ischemia), and even the development of disseminated intravascular coagulation (2). SARS-Cov-2 infection is associated with a severe immune response and the release of proinflammatory cytokines (systemic cytokine storm) and procoagulant (3).

The gastrointestinal tract is the largest immune organ and the enterocytes, together with the pancreatic islets and the endothelial cells found there, express abundant angiotensin-converting enzyme 2-related carboxypeptidase (ACE-2). Thus facilitating the entry of SARS-CoV-2.

Tang H. reported that 71.6 % of patients who died of COVID-19 developed disseminated intravascular coagulation, as compared to 0.6 % of survivors (2). Secondly, in patients with severe COVID-19, an increase in von Willebrand factor has been reported as a result of endothelial damage and the development of thrombotic phenomena (4).

In our center, we have treated three patients with severe ischemia of the colon, one of them associated with pancreatic necrosis (5). Apart from the mechanisms reported by Fernandes et al. (1), this thromboembolic pathogenesis should also be taken into account in patients with severe COVID-19 and prophylaxis with low molecular weight heparin should be implemented (2).

References

1. Fernandes DA, Yumioka AS, De Meneses HR. SARS-CoV-2 and acute pancreatitis: a new etiological agent? Rev Esp Enferm Dig 2020. E-pub ahead of print.

2. Tang N, Bai H, Chen X, et al. Anticoagulant treatment is associated with decreased mortality in severe coronavirus disease 2019 patients with coagulopathy. J Thromb Haemost 2020;18:1094-9. DOI: 10.1111/jth.14817

3. Moore JB, June CH. Cytokine release syndrome in severe COVID-19. Science 2020;368:473-4.

4. Escher R, Breakey N, Lämmle B. Severe COVID-19 infection associated with endothelial activation. Thromb Res 2020;190:62. E-pub Apr 15th, 2020. DOI: 10.1016/j.thromres.2020.04.014

5. Almeida A, Valentí V, Sánchez-Justicia C, et al. Severe colon ischemia in patients with severe coronavirus-19 (COVID-19). Rev Esp Enferm Dig 2020. E-pub ahead of print. DOI: 10.17235/reed.2020.7329/2020